## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization

International Bureau



# 

(43) International Publication Date 17 February 2005 (17.02.2005)

PCT

### (10) International Publication Number WO 2005/014088 A1

(51) International Patent Classification7: A61M 5/50, 5/32

(21) International Application Number:

PCT/GB2004/002921

(22) International Filing Date: 5 July 2004 (05.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0317800.1

30 July 2003 (30.07.2003)

(71) Applicant (for all designated States except US): SAFE-T LIMITED [GB/GB]; Laurel House, Croit-Y-Quill, Lonan, Isle of Man (GB).

(72) Inventor; and

- (75) Inventor/Applicant (for US only): JEFFREY, Peter [GB/GB]; 98 South Mossley Hill Road, Liverpool L19 9BJ (GB).
- (74) Agent: HAMMERSLEY, John; Harrison Goddard Foote, Orlando House, 11c Compstall Road, Marple Bridge, Stockport SK6 5HH (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Declaration under Rule 4.17:

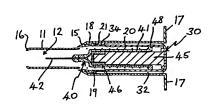
of inventorship (Rule 4.17(iv)) for US only

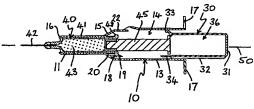
#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: ACTUATOR AND CONTAINMENT DEVICE FOR A SYRINGE





(57) Abstract: To eliminate needle-stick risk by encapsulating the needle of a syringe immediately after discharge of syringe contents (43), the entire syringe, such as a pre-filled miniature glass syringe (40), is housed in a device comprising a hollow body (10), a spring (20) and a plunger (30). The barrel (41) of the syringe (40) is held in the body interior against the force of the spring (20) by latching formations (IS) internal to the body (10). The plunger (30) itself is hollow so as to provide a chamber (36) to receive the syringe piston means (45, 46) and at least part of the barrel (41) upon retraction of the syringe. The plunger (30) has deflectable engagement elements (33) at its forward end so that as it is pushed in to the body (10), it reliably displaces the syringe piston/rod (45, 46) to discharge the syringe contents (43) via a hollow needle (42), the elements (33) ultimately being deflected outwards as the contents are fully discharged so as not to impede syringe retraction into the hollow plunger (30). The plunger (30) also has latch opening projections (34) at its forward end which, as the plunger (30) is pushed home, serve to disengage, e.g. by deflection, the latch formations (18). The syringe barrel (41), together with the needle (42) and piston means (45, 46) are then immediately retracted into the device by force of the spring (20).



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.